Section 2
Narrative

Page

General Considerations ..... **2 - 1**

Functional Considerations ..... **2 - 2**

Technical Consideration ..... **2 - 8**

Narrative
General Considerations

Current Directions:

Nuclear Medicine is a diagnostic and therapeutic supporting service that utilizes radionuclides for in-vitro testing (bench work) and in-vivo functional determinations, treatment and/or creation and interpretation.

Patient diagnostic procedures require the introduction of a radiotracer, most often by means of intravenous injection.

The Gamma Camera, which is capable of rapid sequential imaging and tomographic imaging, detects emitted rays.

The process is particularly useful for assembling quantitative functional information on organs (such as the kidney, heart, brain, and, thyroid gland), systems (such as urinary, gastrointestinal tract), and processes (such as infection, impaired circulation, malignancies, etc.).

Future Trends:

The development of digital gamma camera systems that interface with hospital information systems will allow departments within the hospital and clusters of local hospitals to have access to patient data.

The expansion of telecommunication nuclear networks with tertiary missions will result in the affiliate (satellite) sites being located in smaller inpatient and ambulatory care facilitates that are closer to the patient's residence.

The prevalence of film-less nuclear imaging services, like Picture Archiving Systems, will eliminate the need for film developers, lightrooms, and darkrooms.

Narrative
Functional Considerations

Operations:

Nuclear Medicine is a referral-based diagnostic and therapeutic service, usually organized as a separate department, depending upon the medical utility of the specialized properties of various radionuclides.

In addition to diagnostic nuclear imaging and treatment, other services may include immunoassay, specimen analysis, and cardiac stress-testing..

Therapeutic Services include radiopharmacy, and usually exclude all external beam forms of radiation therapy.

Imaging Process:

Referring physicians send requests with clinical findings.

The Imaging Process begins with patient reception, record initiation, and outpatient waiting or inpatient holding.

Prior to imaging, patients may gown and then go to the Radiopharmacy/Injection Area, where dose administration occurs.

A separate waiting area holds dosed patients awaiting their procedure.

Patient examination and imaging occur in the procedure areas. Patients are usually retained until the quality of the image is ensured.

Electronic and/or video images are viewed and enhanced at imaging consoles within the procedure rooms and within the adjoining computer work room.

Film image processing, record identification and quality assurance take place in the film work area.

After the patient has been discharged, interpretation and consultation occur in the computer image and film reading work areas.

Record distribution, storage, and retrieval usually occur locally and may be consolidated with patient registration and reception functions.

Diagnostic Lab Process:

Referring physicians send work orders to the diagnostic lab.

Specimens, possibly including biopsies, are received and/or collected from remote drawing areas within the department.

Specimen receiving, holding, prep, examination, interpretation, consultation, record distribution, storage and retrieval all occur in the RIA Lab.

Patient Care Concept:

Because of the scope of care provided, the high cost of the technology and the highly specialized staff, Nuclear Medicine's location should be accessible to both inpatients and outpatients. Also, telecommunication networks provide the opportunity for the patient imaging to occur in one location and the physician to interpret the computer-generated image at another site. This may be possible and/or desirable under certain criteria.

Most imaging equipment tends to be free-standing or rail- mounted as criteria often do not dictate permanent installations in lead-shielded rooms. PET scanning equipment (cyclotrons) may be an exception.

Ancillary specialized units, for specialties such as endocrinology and/or nuclear cardiology, may be established at a remote location from the main department. However, this is less desirable and patient safety criteria must be met. Mobile equipment allows limited imaging procedures in inpatient and ambulatory care settings that are outside the main department.

Narrative
Functional Considerations

Level of Care:

Nuclear Medicine includes a wide array of specialized, high-cost equipment, making duplicating facilities in inpatient and ambulatory care settings unfeasible. Also, many regulatory requirements regarding service placement and operation do not support such duplicating. Most of the workload is predominantly outpatient care, but inpatient access is also significant.

Patient Base:

VA Nuclear Medicine facilities focus on serving the veterans, and they may include sharing agreements, joint ventures and referrals. Efforts to include the veteran's family and the general public are also important. The aging veteran patient with co-morbidities and increased severity of illness necessitate design features that emphasize safety and prevention of risks.

Medical Records:

Printed diagnostic evaluations generated within the department become part of the veteran's Consolidated Health Record. The Nuclear Medicine department locally stores actual films and/or electronic data. Special film sizes partially dictate service storage.

The ordering physician receives diagnostic evaluations in either hard copy or electronic form (as required).

Image manipulation, interpretation, archiving, retrieval, and distribution procedures require varying levels of electronic and film record storage requirements. Changing technology will affect final space requirements.

Patient Protocol:

Referring physicians order outpatient and inpatient procedures that occur during regular business hours.

Provision of in-house remote services may require storage for mobile equipment located within the department or within the unit served (ex. ICU).

Special Requirements:

Teaching facilities will require more technical support space to accommodate small groups (needing consultation, interpretation, and image manipulation areas).

To verify space needs, coordination is required between related departments, facilities, and program missions. These may include preparation, segregated waiting, examination, and stretcher holding spaces.

Such departments may include:

- Hospital Nursing Care
- Cardiology
- Long-term Care Facilities
- Ambulatory Services
- Emergency
- Surgery
- Radiation Oncology

Narrative
Functional Considerations

Space Planning Issues:

Flexibility:

The technical space requirements (to accommodate Nuclear Medicine) do impose some constraints on siting of the Nuclear Medicine facilities. End-point corridors that do not facilitate and/or require passage to other areas are preferred.

To accommodate a broad range of physical equipment configurations, universal criteria are usually applied in the design of Nuclear Medicine Imaging Procedure Rooms

Combining Procedure Rooms into larger spaces to augment flexibility can decrease patient privacy and can possibly decrease workload productivity.

Efficiency:

Shared support and qualified technical staff cross-training and coordination is possible if Nuclear Medicine and other similar services are adjacent. These are the source of patient referrals and/or have similar support requirements for patient reception, report generation, and storage. MRI, Computerized Tomography, and Nuclear Medicine utilize similar digital image manipulation techniques, although the purpose and the technology of the imaging systems are different. Radiology equipment, including MRI, detects anatomic structural changes by radioactive emission from the camera that creates a film image. Nuclear medicine, on the other hand, detects physiological and/or biochemical changes in organ functioning. A radionuclide is administered to the patient and a camera magnifies and then creates an image of the radioactivity emitted from the patient's target organ.

Shared patient and staff support can include staff lockers, lounges, patient waiting, inpatient holding, and registration. However, segregated patient post-dosing areas are required.

Human Factors:

Patient dignity and self determination must be accommodated while maintaining operational efficiencies.

Large-sized unfamiliar equipment and public perceptions regarding nuclear issues require creative design to minimize anxiety.

Due to the length of time a patient is relatively motionless under a gamma camera, it is helpful to have a television within the patient's view for diversion. If a health-maintenance videotape library is available in the facility, nuclear imaging provides an opportune time for such patient education.

Patient's vulnerability to stress (from noise, lack of privacy, poor lighting, and other causes) can have harmful effects on the healing process. This is well-known and documented .

An inherent opportunity exists in the design of Nuclear Medicine Facilities to address these issues and to put forth creative solutions that enhance patient comfort and contribute to positive outcomes.

A prime objective is to de-emphasize the institutional image of traditional health care facilities. This can be accomplished by surrounding the patient (and the family members) with architectural finishes and furnishings that are familiar and non-threatening, and that also meet the safety needs and requirements necessitated by utilizing radioactivity.

Narrative
Functional Considerations

Good planning and design appeals to the spirit and sensibilities of patients and care providers alike.

A Nuclear Medicine facility should be a non-threatening environment that allows the building itself to become part of the therapy. Integration of the technical requirements must support these concepts.

Patient privacy and facility utilization can coexist without sacrifices.

Planning, design, and detail considerations should address security issues.

The application of UFAS and ADA design standards, for space and fixed equipment layouts, satisfies handicapped accessibility issues.

Technical and Environmental:

The design of Nuclear Medicine facilities should consider the separation of non-radioactive areas from radioactive sensitive activities. Such consideration can reduce or eliminate the need for excess radiation protection. Such segregation also ensures the integrity of radiation-sensitive imaging and quantitative techniques in both the nuclear imaging and the lab settings.

Dosed patients awaiting procedures should have dedicated waiting and toilet facilities. This protects other individuals from unnecessary exposure to low and short-lived levels of radiation.

Functional Space Relationships:

Work Flow:

Patient:

A singular point of control for inpatients and outpatients can be provided while maintaining convenient outpatient access.

The patient process flows from registration and waiting and/or holding, to gowning (if required), through dosing/radiopharmacy, to “hot” waiting, to procedure rooms, and back to waiting for discharge.

A functional plan accommodates patient flow with minimal staff direction.

Staff and Administrative Functions:

Patient traffic areas should not contain staff and administrative areas.

Staff functions may be located within the department, or in a convenient location shared with another department.

Patient Records/Work Orders/Specimens:

Many ancilliary services such as Consultation, Exam, Storage, Records, Reception, Waiting etc., should be a part of any project scope. The Design Guide reflects only major elements of Nuclear Medicine.

Patient records and work orders should move among the administrative, clinical film processing, viewing, and interpretative functions. Actual patient traffic should not come into contact with these documents wherever possible.

In-vitro specimens received from outside the department require access to the lab by cart or hand delivery. Box conveyors and pneumatic tube systems cannot be justified by volume and may affect the quality of the specimen.

In-vitro specimen traffic should not mix with outpatient traffic.

If the department performs blood drawing and/or biopsies, account for specimens within the patient work-flow (as required).

Clean and Soiled Materials:

Narrative
Functional Considerations

Locate clean and soiled utility functions close to the patient areas they support and distance them from patient traffic.

Radioactive Materials

Vendors may deliver radionuclides or generator kits for clinical or research uses that require security and special handling. A dedicated area in the “hot laboratory” or another secured area must be identified for that purpose.

Used radiopharmaceutical containers and/or kits and radiation-contaminated waste articles are retained on-site for a period of decay are and maintained in a decay storage room or closet as required by the materials stored. The National Council on Radiation Protection and Measurement (NCRP) regulates storage. The Nuclear Regulatory Commission (NRC) regulates disposal.

A physicist supervises the secured storage within the department, but it may also be in another secured area of the facility.

A small room with shelves to hold radioactive waste for decay may be required in many facilities. Access to commercial waste disposal is very limited and is very expensive when available. “Decay-in storage” is the waste disposal method of choice. The need for such space is determined by the amount of materials prepared on-site vs. the procurements from commercial radiopharmacies to which waste is ordinarily returned.

Organizational Concepts:

Functional Layering:

The reception area controls access to the patient areas and secures areas where radionuclides are stored or utilized.

Signage is required by law to identify areas where radioactive products are utilized

The reception area initiates and holds patient film records.

Patient areas are consolidated to control patient access and to maintain patient privacy, security, and dignity.

Staff Support Areas, which deal with film work, image manipulation and quality control, are consolidated in a core area to ensure image quality, staff efficacy, and patient record security and privacy.

Clinical administrative areas addressing referral, reading interpretation, and consultation functions are accessible to physicians.

Consultation and interpretation areas are not accessible to patients and should be private staff work areas.

Building Systems Integration:

Depressed slabs and/or structure for electrical access may be (but not required) distributed in floor trenches. The locations require coordination.

Investigate environmental requirements, such as biological safety cabinets or direct exhaust for xenon gas that will not contaminate the air intake.

Staff Utilization and Cross-Training:

The nuclear physics aspect of Nuclear Medicine requires specialized staffing.

Endocrinology and Cardiology diagnostic services utilize nuclear techniques and may benefit from joint activities with Nuclear Medicine.

Other departments, like radiology, also use digital and film image technologies.The Stress Testing activities of Nuclear Medicine, Cardiology, and Ultrasound may be consolidated if patient safety and/or test results are not compromised.

Narrative
Functional Considerations

Location/External Relationships:

Patient Access/Way-finding:

A Nuclear Medicine facility should be located convenient to parking and ambulatory care areas, since it is primarily utilized for outpatient diagnostic procedures. An adjacent location to other diagnostic facilities assists in way-finding and coordination of patient services. However, placement at end corridors away from heavy trafficed areas is important. Inpatient access is required since duplicated outpatient and inpatient facilities are seldom justified.

Functional Adjacencies:

The Nuclear Medicine operations benefits from a location near Cardiology or Internal Medicine, and Radiology for sharing support film and reception services.

Services Access:

Nuclear Medicine gamma cameras' installations and replacements usually do not require special construction other than for load considerations and level flooring. Floor trenches for electrical cabling are not required.

Positron Emission Tomography is not included in this analysis because it requires special dedicated facilities that may be located at a remote location from the department.

Consultants need to be contacted early in the planning stage to assure loading for PET capacity, shielding, and ventilation requirements.

Narrative
Technical Considerations

Architectural:

Interior Materials and Finishes:

Partitions:

Painted, gypsum wallboard on metal studs constitutes the primary construction type for interior partitions. Partitions around physician offices, exam rooms, and treatment rooms should have sound attenuation batts between the studs in accordance with VA Construction Standard 34-1, “Noise Transmission Control”.

Floors:

Floors in offices, conference rooms, and waiting areas should be carpeted with a 100 mm (4 inch) resilient base.

Floors in toilet rooms should be ceramic tile with a ceramic tile base.

Floors in Imaging Units, Radioimmunoassay Units, Radiopharmacy and Scope Cleaning areas should have welded seam sheet flooring with an integral base.

Floors in exam rooms, treatment rooms, and most other spaces should be vinyl composition tile with a 100 mm (4-inch) resilient base.

A prefabricated controlled temperature room for refrigerated storage requires a 100 mm (4-inch) deep depression.

Ceilings:

Ceilings should be primarily lay-in acoustic ceiling tile. Certain areas, such as procedure rooms and treatment rooms, should have lay-in acoustic ceiling tile with a washable sprayed-plastic finish.

Protection:

Wall and Corner guards should be used in corridors and other areas where wall damage from cart traffic is anticipated.

Interior Doors and Hardware:

Interior doors should be 45 mm (1¾-inch) thick solid-core flush- panel wood doors or hollow metal doors in hollow metal frames.

Doorjambs should have hospital type sanitary stops that stop 200 mm (8 inches) from the floor to facilitate mopping. Hollow metal doors should be used where high impact is a concern and where fire rated doors are required. Kick and/or mop plates should generally be applied to both sides of the doors. Handicapped accessible hardware should be used throughout.

Doors leading to radionuclide receiving and storage area and radiopharmacy are required to be steel security doors.

Refer to VA Handbook PG-18-14, “Room Finishes, Door, and Hardware Schedule” for additional information.

Architectural and Mechanical:

Current Center for Disease Control (CDC) requirements for design of public areas within the building to accommodate Microbacterium Tuberculosis patients must be addressed by architectural and mechanical disciplines. Check current requirements with the VA’s task force on transmission of Microbacterium Tuberculosis and TB criteria in HVAC Design Manual for Hospital Projects

Narrative
Technical Considerations

Structural:

Seismic:

In compliance with Executive Order (EO) 12699, and EO 12941, all new and existing buildings constructed or leased by the Federal Government must be seismically safe. The EO's require that nationally recognized model building codes, listed below, be used for the seismic design and construction of new buildings, and for the seismic safety assessment of existing buildings.

- 1991 Uniform Building Code of the International Congress of Building Officials
- 1992 Supplement to the Building Officials and Code Administrators
- 1992 Amendments to the Southern Building Code Congress (SBCC) Standard Building Code

Equipment:

Casework:

For planning and utilization purposes, casework systems should be chosen to provide flexibility

Casework systems should incorporate components dimensioned for each of the multiple re-use installation applications.

Casework systems should be planned to avoid corner installations and filler panel instances.

Information Management Systems:

Information Management Systems shall include elements of physician's order entries, patient registrations, patient charges, scheduling procedures, processing and/or retrieval, report generation, and report status.

The main facility's "information backbone," as well as the departmental local area network, should be planned for compatibility.

Imaging Systems' requirements will vary for each facility and the technology may be deferred in selection and/or procurement. Design requirements will be as instructed. Equipment vendors need to be contacted for specifications prior to design.

All occurrences of safety cabinets, hoods, and laminar flow hoods will require a confirmation of Hood or Cabinet Classification and Type to determine room air and ventilation performance requirements.

Heating, Ventilation, and Air Conditioning:

Operation:

Air conditioning systems should be provided to heat, cool, and ventilate the individual space, as required by the VA design criteria.

Follow TB criteria in the HVAC Design Manual for Hospital Projects.

The air conditioning systems serving the Nuclear Medicine Service should be designed to operate at full capacity to satisfy individual room local requirements

Certain restricted areas, such as imaging rooms and preparation areas, use Xenon gas (XE-133). Being a radioactive material, Xenon requires special ventilation. See the HVAC Design Manual for Hospital Projects for specific ventilation requirements.

Narrative
Technical Considerations

Capacities:

The number of people and the air conditioning load notes on the room's design standard sheet establishes the basis of the design guide and its use in planning. The engineers and/or designers should verify the actual number of people and the air conditioning load to agree with the project requirements.

Similarly, engineers and/or designers should verify equipment AC loads shown or per actual equipment furnished on a project.

The percentage of outside air should be based on the space's total supply air quantities.

Air Quality and Distribution:

Corridors should not be used to supply or to exhaust and/or return air from rooms. Corridor air may be used to ventilate toilet rooms, and small electrical or telephone closets opening directly on to corridors. Exfiltration / infiltration from positive / negative pressure rooms adjacent to a corridor should be considered in balancing air flow.

The transferred air area's should not be more than 2.8 $mm.^3$ /min (100 CFM) per undercut door.

Care should be taken to minimize the short- circuiting of air between supply and return and/or exhaust openings in rooms.

Exhaust System:

A dedicated exhaust system should be provided for all hoods located in Nuclear Medicine Service. Locate the supply air diffusers as far away from the hood sash opening as possible; and size to eliminate draft conditions and provide proper air flow at the hood.

Seismic:

Where required,install the HVAC system with seismic provisions as outlined in the VA HVAC Design Manual for Hospital Projects.

Refer to VA Handbook H-18-3, CD-54, "Natural Disasters Resistive Design, Non-Structural" for additional information.

Noise Level:

Select HVAC equipment, ductwork,and distribution devices, to achieve noise levels listed in the VA HVAC Design Manual for Hospital Projects.

Plumbing:

Water and Waste Systems:

The plumbing systems should be provided to satisfy the departmental plumbing needs.

The department's domestic cold water should be piped to all plumbing fixtures and equipment that require this utility.

The department domestic hot water should be piped to all plumbing fixtures and equipment that require this utility. A hot water return system should be provided to assure the design temperature reaches the furthest outlet.

The department plumbing fixtures and drains should be drained by gravity through soiled waste and vent stacks. In addition, the department special waste should be drained through corrosion resistant flame retardant piping into either a local or a centralized acid dilution tank.

Medical Gas Systems:

The department's medical gases' outlets establish the basis of the design guide and its use in planning. The engineers and/or designers shall verify the medical gases' locations and quantities for individual projects.

Narrative
Technical Considerations

Seismic:

Where required, the plumbing and medical gases' systems should be installed with seismic provisions as outlined in the VA Plumbing Design Manual for Hospital Projects.

Refer to VA Handbook H-18-3, CD-54, “Natural Disasters Resistive Design, Non-Structural” for additional information.

Electrical:

Illumination:

Recessed fluorescent luminaries with acrylic prismatic lenses typically provide illumination.. The fixtures typically use F32TB lamps in compliance with the National Energy Policy Act of 1992. Lamps have a minimum color rendering index (CRI) of 85 and a color temperature of 4100 degrees Kelvin (K), which is close to the “cool white” color temperature of 4150 degrees K.

Lighting intensities conform to the VA design criteria, the IES Lighting Handbook and IES publication CP-29, “Lighting for Health Care Facilities.”. IES CP-29 is currently being updated and will be replaced by IES Recommended Practice RP-29 in the future.

Lighting is typically controlled by wall-mounted switches located at the entrance to the room. Larger spaces may utilize multiple switching by separate switches for lighting of individual zones or areas.

Power load densities for lighting are listed by use by the mechanical HVAC load calculation purposes. Load densities should be verified for the actual design, as they may vary depending on the room configuration, fixture types, lamps, and ballasts.

Power:

General purpose duplex receptacles are typically provided on each wall of a room or space.

Special pieces of equipment, such as refrigerators, have dedicated duplex or special receptacles.

Workstations with personal computers (PC’s) are typically provided with quadraplex receptacles for the PC, a monitor, and a printer.

Junction boxes are provided for equipment requiring a hardwired connection.

Certain modular casework units are provided with a utility access module with a surface mounted electrical strip mold that also provides a chase for wiring. Conduits and junction boxes are provided to connect to the utility access module for power wiring.

Duplex receptacles on the critical branch of the emergency power system are provided for selected pieces of equipment, such as gamma cameras, computers, and refrigerators. They allow for limited operation during a power outage.

Emergency power requirements are addressed in VA Construction Standard H-18-3, # 800-3.

Security:

Push-button combination locks need to be installed on all doors in areas where radionuclides are stored or utilized. Signage is mandatory for identifying areas where radioactivity is used.

Narrative
Technical Considerations

Life Safety:

Purpose:

A life safety program should be developed to provide a reliable system to protect the building occupants, fire-fighting personnel, building contents, building structure, and continuity of building function. Its intent should be to provide a reasonable level of fire safety by reducing the probability of injury, loss of life or building function changes due to a fire. This can be accomplished by limiting the development and spread of a fire emergency to the area of origin and reducing the need to total occupant evacuation.

Stressing areas (whether located in nuclear medicine or cardiology), need to have ready access to a “crash” emergency cart in the event of a need to provide oxygen, medications, resuscitation and/or cardioversion.

Components:

The design aspects of the facility that relate to the fire and life safety include:

- Structural fire resistance;
- Building compartmentalization;
- Fire detection, alarm and suppression;
- Smoke control and exhaust systems;
- Firefighter access and facilities; and
- Emergency power.

Fire Suppression:

New hospital construction and renovated areas of existing facilities are required to be fully protected by an automatic fire suppression system.

Fire Egress:

The minimum width of corridors and passageways is 1120 mm (44”- 3’-8”). However, supply cart movement requires 1800 mm (72”- 6’-0”) or 2400 mm (96” -8’-0”) corridors and passageways, which may also be more practical. The corridor walls should be protected by wall and bumper guards.

References:

Refer to the latest editions of the NFPA 101 “Life Safety Code,” the Uniform Building Code, and the additional standards published by the National Fire Protection Association (NFPA)

Energy Conservation:

Refer to VA HVAC Design Manual for Hospital Projects for information.

Narrative
Technical Considerations

Communications:

Telephone:

Telephone outlets are typically provided at each workstation or in each room. Desk outlets are 455 mm (18”) AFF and wall phone outlets are 1200 mm (48”) AFF.

Certain modular casework units are provided with a utility access module that houses communication outlets and provides a chase for cabling. Conduits and junction boxes are provided to connect to the utility access module for telephone service.

Automatic Data Processing (ADP):

ADP, or computer outlets, are typically provided at each workstation with a personal computer (PC) and/or a printer. Desk outlets are 455 mm (18”) AFF.

Certain modular casework units are provided with a utility access module that houses communication outlets and provides a chase for cabling. Conduits and junction boxes are provided to connect to the utility access module for ADP service.

Public Address:

The department will be included as part of the hospital-wide PA system. Speakers are typically located in corridors and public spaces. The actual system configuration will depend on the overall design layout and functional requirements.

Hands-free interactive intercommunication devices expedite work flow and improve patient safety between patient reception, imaging rooms and the “hot laboratory." This enables technical staff to be informed and/or schedule patient arrivals without having to leave patients being imaged or having to interrupt activity when handling radionuclides.

Waste Management:

Medical Waste:

Medical waste is generated in exam and treatment spaces. It is bagged, collected, and transported to the soiled utility rooms where it is held in separate containers, awaiting transport to the medical waste handling facility.

General Waste:

General Waste is generated in all spaces. It is held in containers for collection and sorting into carts or it is bagged and placed in a waste chute and transported to the waste handling facility.

Recycling:

Methods for sorting, collecting, transporting, and disposing of recyclable products must be specifically analyzed for each facility and location.

The optional use of disposable and reusable products is an important consideration.

Soiled Linen:

Soiled reusable linens are generated in exam rooms, treatment spaces, and patient and staff gowning areas. They are collected in carts or hampers (depending on volume) in the soiled utility rooms or they are bagged and transported to (a) central collection area(s) via soiled linen chutes.

Disposable linens are included with general recyclable waste or medical waste as appropriate.

Narrative
Technical Considerations

Utensils:

Reusable utensils include bed pans, urinals, emesis basins, and other stainless steel items that are used in exam and treatment areas. They are transported to the soiled utility room where they are reprocessed, if steam washers are available, or collected for transport to the Sterile Processing Department for reprocessing.

Radioactive Materials and Waste:

Radioactive waste is generated within the Radiopharmacy, the Radioimmunoassay Lab, and the Patient Dose Area (as well as other areas of the hospital).

A small room with shelves to hold radioactive waste for decay may be required. Access to commercial waste disposal is limited and expensive. Decay-in-storage is the waste disposal of choice. Need for space is determined by the amount of materials prepared on-site vs. procurements from commercial radiopharmacies to which waste is ordinarily returned.

Transportation:

Patient:

Outpatient:

Provide convenient access from patient parking to the primary care entrance.

Provide passenger elevator access to Nuclear Medicine facilities off main entrance levels.

Use techniques, including clear access routes, public spaces, landmarks, and signage, to facilitate way-finding.

Inpatient:

Access for stretcher and wheelchair patients in inpatient areas should be provided.

Inpatient and outpatient traffic should be kept separate where possible.

Inpatient access from hospital service elevators is required.

Shared control points occur for inpatients and outpatients.

Inpatients access patient holding through a dedicated route separate from outpatient waiting.

Staff:

Staff access should be separated from patient waiting and holding areas.

Staff lounge and locker areas should be away from inpatient and outpatient traffic.

Records:

Nuclear Medicine utilizes digital imaging and retrieval techniques that may reduce the need for storage and retrieval of films.

Nuclear Medicine film records are usually not the standard 275 mm x 350 mm (11”x14”) format and are stored locally.

Nuclear Medicine volumes usually do not justify pneumatic tube of automated box transport access to Medical Records; these transport modes may be located where shared use is possible.

Provide data communication access at viewing, interpretation, and video image manipulation areas.

Specimens:

Specimens are collected locally or are hand transported to the department.

Specimens are received at the radioimmunoassay lab and are held there in refrigerators or freezers as required.

Specimens are discarded as medical or radioactive waste as appropriate.

Narrative
Technical Considerations

Pharmaceuticals:

Pharmaceuticals, including narcotics, are transported by pharmacy personnel to the department in locked carts.

Radiopharmaceuticals are delivered directly from the vendor to the department on a “just in time” basis.

Narcotics are delivered to a narcotics locker which is usually located in a clean supply or patient prep area that is remotely alarmed to the nearest nursing station.

Materials:

Clean supplies are transported by exchange carts which are stored in the Clean Supply Room.

Supplies are transported by Service Elevator and through corridors separated from patient traffic where possible.

Deliveries are scheduled during hours when patient visits are not scheduled.

Linen:

Disposable linens are delivered as part of clean supplies.

Sterile Supplies:

The use of sterile supplies is minimal and is accommodated by prepackaged or disposable items delivered with clean supplies.

Food:

Meal and Nourishment deliveries to Nuclear Medicine are not required.

Waste:

Waste is collected by housekeeping staff and is transported to the Soiled Utility Room where it is disposed, as indicated by the previous paragraph entitled ‘Waste Management.